



Departemen Kehutanan
dan Perkebunan



NATURAL RESOURCES
MANAGEMENT PROGRAM



Bunaken National Park Report

June 1999

Consultation Report

Bunaken National Park: Training Report and Management Assessment Report

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The Natural Resources Management/EPIQ Program's Protected Areas Management team works with BAPPENAS and the Directorate-General for Nature Protection and Conservation (PKA) of the Department of Forestry and Estate Crops to strengthen protected areas management in Indonesia. Work includes promoting partnerships among the private sector, government agencies, NGOs, and local communities; raising conservation awareness; improving conservation financing; and building institutional and human resources capacity.

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Executive Summary

1. Introduction

The Protected Areas Management (PAM) component of the Natural Resources Management (NRM) Program works with the Directorate General of Nature Protection & Conservation (PKA) at the Department of Forestry and Estate Crops to strengthen protected areas management in Indonesia through a number of inter-related strategies including human resource development, institutional strengthening, the development of effective partnerships, and conservation education and awareness.

North Sulawesi's Bunaken National Park is a priority marine site as it can be used as a focal point for the development of materials, including those for training as well as those for conservation education and awareness which can be applied in marine protected area (MPA) management elsewhere in Indonesia. To date, twenty-seven MPAs have been declared, covering a total of 4,540,607.35 million hectares. Of these, six areas have been declared marine National Parks, covering a total of 3,682,955 hectares. The total staff for these six national parks is 413 personnel, 267 of whom have been appointed park rangers.

Bunaken was declared a marine National Park in 1991, and covers 79,056 hectares, consisting of six islands on the northern side, with a total area of 62,150 hectares, and 16,906 hectares on the southern part. The park's coral reefs, mangrove forests and sea-grass beds provide important habitat to a diversity of marine life, and contribute to the local economy from tourism, fishing and seaweed production. Popular among both international and Indonesian divers, its proximity to Manado, the capital city of the province of North Sulawesi also makes this park a popular recreation place for the local population.

Between 1991 and 1996, the NRM Project/USAID provided full technical and financial support for the development of a twenty-five-year park management plan, which resulted in comprehensive reports on the results of studies, surveys, valuations, and reviews which also involved community participation sessions. In 1997, the NRM PAM component of the NRM Program started playing an active role in establishing partnerships between the private sector and the park management staff; developing a training program for the park rangers which could become a model for other MPAs in Indonesia; and, facilitating an Institutional Development Workshop.

Two reports resulting from this NRM/EPIQ PAM consultancy follow. The Bunaken Training Report is the result of cooperation with the Bunaken National Park manager and his staff to make a rapid assessment of opportunities for addressing human resource development, institutional strengthening and partnerships, which was followed up with active, hands-on field training. Meanwhile, the Bunaken National Park Management Assessment Report contains the identification of management priorities for Bunaken National Park and strategies for addressing them.

2. Summary of findings, recommendations and follow-up actions

The Bunaken National Park Training Report shows that there are too few park rangers in Bunaken. Those that are available lack knowledge, job descriptions and training but reacted positively when these were provided. New, qualified park rangers are being employed this year and this will help to address the problems.

A greater feeling of pride in their positions should be engendered by the production of a staff handbook, increased interaction and cooperation with other stakeholders and management/PRA experts, the resolution of internal management problems and more training in a range of areas including MPA (marine protected area) management and maintenance skills.

The Department of Forestry and Estate Crops' Pusdiklat (Education and Training Center) will follow the training up with a one-day workshop to formalize the training module into the Department of Forestry and Estate Crops. Participants from the training are to be awarded training certificates.

The Bunaken National Park Management Assessment Report shows unresolved zonation problems, partially due to unclear resource rights and management boundaries and a blurring of the understandings of the job descriptions of park rangers and the police. A lack of communication exists between the park rangers themselves. There is also the major problem of a greatly reduced budget, although some funding is now being obtained from sources other than the APBN Budget.

Greater attention to accessing these funding sources, the review and clarification of the twenty-five-year management plan, stakeholder participation, the revitalization of Community Conservation Agreements, and enforcement of zonation changes and demarcation would all serve to improve the situation.

Effective zonation requires a participatory, consultative zonation development process, demarcation of zones in the field and on maps, and adequate distribution of maps and regulations to targeted audiences as well as the general public. Cheap materials can be used to mark zonation, while the head of the park will start to familiarize the stakeholders in a participatory zonation process. The park staff will be involved in proposing amendments to the twenty-five-year management plan.



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Bunaken National Park Training Report



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Bunaken National Park Training Report

1. Introduction

Of Indonesia's six marine National Parks, the largest area is Teluk Cenderawasih, which covers 1,453,500 hectares and has a total staff of sixty-seven. The smallest area is Bunaken, which covers 89,065 hectares and has a total staff of thirty-two. Pulau Seribu, which covers 108,000 hectares, was the first MPA (marine protected area) in Indonesia. It was established during the National Park Congress in Bali in 1981, and was declared a National Park in 1995. To date, Pulau Seribu Marine National Park has the highest number of staff, consisting of fifty-eight Park rangers, and forty-one management staff.

The lack of human resource capacity has been a major constraint in managing MPAs. The recruitment of staff for MPAs is part of the overall recruitment system of the Department of Forestry and Estate Crops, where the majority of staff have a background in forestry, with no marine training whatsoever.

MPA-specific human resource requirements, such as fisheries experts, marine biologists and coastal zone specialists have never been part of the formal recruitment and placement process. Moreover, training based on a specific curriculum targeting MPA staff was never seriously incorporated into the training program of Pusdiklat (Education and Training Center). The staff of PKA occasionally conducted training with specific equipment such as that for diving, in order to equip the staff with the technical ability to conduct day-to-day management.

No.	National Park	Total staff	Park rangers	Size (ha)
1.	Pulau Seribu	99	58	108,000
2.	Bunaken	32	23	89,065
3.	Teluk Cenderawasih	67	47	1,453,500
4.	Wakatobi	67	57	1,390,000
5.	Taka Bonerate	79	50	530,765
6.	Karimunjawa	69	41	111,625

Table 1. Human Resources Capacity in Marine Protected Areas (Statistik PKA, 1998)

This year, a number of university graduates have been recruited as Park rangers, and some of them have a marine biology background. They are all stationed in MPAs. This

new approach to human resource development will benefit the marine conservation staff.

Bunaken National Park has two Park rangers with fisheries backgrounds who graduated from a local university. The idea of recruiting staff who originated from the local area is highly recommended. This facilitates the process of creating a sense of belonging and developing a sense of pride among the staff. Other new recruits also graduated from local universities and have been stationed at conservation sites in the same provincial areas as the universities from which they graduated.

2. Marine conservation staff training conducted by the PKA (Directorate General of Nature Protection and Conservation) during 1998-1999

To date, the target of PKA training for marine conservation staff is for them to develop and master diving skills. As of the 1997/1998 fiscal year, there were 133 staff trained in diving. This diving training was independently organized by the Pusdiklat (Education and Training Center) of the Department of Forestry and Estate Crops and was administrated under the head of the Subdirectorate (Kasubdit) of Suaka Alam Perairan, in the PKA.

A four-day training course for marine conservation staff was organized jointly by PKA and LIPI (the Indonesian Academy of Sciences) in Pulau Seribu. The training objectives were to increase diving skills and to develop MPA (marine protected area) management concepts and approaches such as threat analysis, coral reef monitoring and the legal aspects of MPAs.

The Wakatobi Project, a program funded through AusAid, and implemented by the Western Australia Department of Fisheries, conducted introductory training activities for Park rangers in marine skills, as part of their overall training program for fisheries management and mariculture development in the park. Two Australian trainers from Australia's Department of Agriculture, Fisheries and Forestry assisted in the training. As a result of their preliminary project, it has been recommended that a further training program be developed to increase the professional abilities of the Park rangers.

3. Constraints on organizing training on the management of MPAs

Managing MPAs (marine protected areas) requires a fundamentally different approach to that of managing terrestrial areas. Due to the nature of the Department of Forestry and Estate Crops, the majority of the staff are foresters. Therefore, training in specific skills for the management of marine issues is required, extending from basic knowledge to advanced technical skills. Furthermore, marine biology is considered a new field in Indonesia. It has only been during the last ten years that some universities have opened special departments that teach marine biology. The consequences of this are that the number of people with expertise in Indonesian marine issues is small, and that the few experts are scattered far and wide.

To overcome these constraints, several strategic steps should be considered:

1. Partnerships should be developed with stakeholders such as universities, scientific institutes (e.g. the Center for Oceanic Research and Development (P3O) at LIPI), conservation science-based NGOs (local and international), and traditional communities (for their traditional knowledge and resource rights).
2. The human resource development component should be built into the Memorandum of Understanding between the organizations and the park authority. Some international conservation-based organizations have field activities in MPAs. At the moment, the transfer of knowledge and in-service training are not being systematically programmed, despite the fact that the transfer of knowledge from scientists to park staff was an important requirement in the past.
3. Joint efforts should be made to facilitate management approaches such as biodiversity surveys and monitoring, community development, and multi-stakeholder participation. Many surveys and research activities conducted by other parties in the park often only involve park staff in an administrative role, or only as laborers, rather than training the staff so that they can participate in and then follow-up the surveys or research.

4. Training

Having recognized the need for further training for marine park staff, the Marine Protected Area Consultant from the NRM PAM component of the NRM Program, in collaboration with local NGOs, P3O LIPI and the local university, designed and implemented a training program for the park rangers.

The goals of the training were to increase their knowledge and abilities, and enhance their technical skills in order to broaden the scope of the management of MPAs, and to present the Department of Forestry and Estate Crops a tested MPA management training module for future use.

The scope of the training consisted of:

4.1. Training needs assessment

A ten-day visit to Bunaken National Park was conducted for a training needs assessment. The purpose of conducting this assessment was to assess the training needs for MPA (marine protected area) management, and to initiate the development of training curricula, which should be further developed according to the needs identified in future training sessions.

A series of discussions to develop training needs was held with various people, particularly with the head of Bunaken National Park, park staff, NGOs, and individuals. The purpose of these discussions was to gather information related to the background education of the park staff, their technical skills, scope of responsibility, constraints on carrying out their work, and the skills or knowledge they would like to gain.

The park rangers were identified as a group which receives little or no training after they are recruited.

The decision was made that training would be aimed at the park rangers.

A one-day discussion was organized, and the topics which were put forward were as follows:

- Basic identification of protected marine species;
- The role of the park ranger in the protection and patrolling of the park;
- The role of the marine police in the park;
- The function of MPAs;
- The threats and opportunities in the park;
- Awareness of the importance of the protection and conservation of habitats and biota in the park;
- Visitor interpretation for the park;
- Ability to conduct habitat monitoring;
- Swimming skills.

These topics can be grouped as follows:

1. Nature of the marine environment;
2. Management concepts and approaches;
3. Field survey capacity.

4.2 Training implementation

4.2.a Development of training curricula and materials

The Pusdiklat (Education and Training Center), in collaboration with International NGOs, such as WWF and AWB, conducted a one-month marine and coastal conservation management-training workshop in 1991. The training materials were studied and revised. Other materials were developed from additional sources, and consultative meetings concerning the development of materials were held with related agencies such as PKA, LIPI, universities and NGOs.

The training curriculum was designed based on a training needs assessment and consisted of three parts as follows:

1. The first part included theory and concepts addressing the ecology and biology of the marine environment and its biota, and outlined the differences between the marine and terrestrial environments. This part was important in order to emphasize that the issues faced by staff in managing MPAs (marine protected areas) are different from those faced in terrestrial areas. Furthermore, these modules are necessary because most of the staff of MPAs in Indonesia do not have backgrounds in marine biology or related disciplines.
2. The second part covered various management issues. It was aimed at increasing the understanding of the participants of laws and regulations, roles and responsibilities, the importance of community participation and other stakeholders in the planning, implementation, monitoring and evaluation processes of the management of MPAs.

3. The third part included practical training aimed at enhancing staff capabilities to carry out their duties, such as swimming, snorkeling, conducting basic monitoring surveys on coral reefs, and identifying groups of common biota, including protected marine species.

4.2.b Training site

The training was conducted in Bunaken National Park for several important reasons. It is centrally located, and readily accessible to other MPAs as well as Jakarta. It shares many of the problems facing other MPAs in Indonesia including the balance of tourism and community development, illegal fishing practices, and inadequate management capacity. This makes Bunaken National Park a perfect site to develop this and future MPA training initiatives.

4.2.c Length of training

Training was planned for six days, with pre- and post-training sessions for mastering swimming and basic snorkeling skills. Before the training began, three staff could not swim, and three of them were new to the sea. Swimming sessions were started ten days before the training began in order to ensure active participation in the training program..

4.2.d Appointment of resource persons and facilitators

Resource persons and facilitators were appointed according to their experience and ability to present various components of the course.

The Resource persons included:

1. Head of the marine section in the PKA (Directorate General of Nature Protection and Conservation), Jakarta;
2. A senior marine biologist from P3O LIPI;
3. A coral reef specialist from the University of Samratulangi;
4. A community participation specialist;
5. A representative from Kelola, a local NGO familiar with community-based coral reef monitoring;
6. The head of the local marine police;
7. A senior officer from PEMDA;

8. A consultant on marine protected area management as the training coordinator.

There were twenty-one participants, including twenty park rangers and one administrative staff. There were four newly recruited park rangers, of which two were marine biology graduates, and two others were women rangers. A number of women rangers were recruited this year for several National Parks to cover tasks such as conservation awareness, visitor interpretation, and some administrative jobs.

The training was divided into two parts, with a total duration of forty-one hours. The first part was theory, and was held in the Balai Bunaken National Park office in Molas village. The second part was conducted in a village inside the park. The purpose of having the practical and community participation parts of the training in the village was to give a sense of common purpose between the park authorities and the communities living in the park. Some of the participants had never been into this part of the park before. Alungbanua village was chosen as the site for several reasons. For example, the community had previously drafted a Community Conservation Agreement with the National Park management, relating to the utilization of coral reef resources and the protection of marine species. The villagers had already been exposed to many participatory management activities conducted by local NGOs, projects and organizations.

The class lectures were given using several techniques such as small group discussions and workshops, lectures, the analysis of case studies, and question and answer sessions. Splitting participants into small groups was usually the most effective way of encouraging them to discuss and defend their ideas and arguments. It is the nature of the overall education system in Indonesia that the students passively accept the ideas of the teachers without being given the opportunity to ask questions. The vocalization of ideas or arguments in the class is neither encouraged nor supported.

Small-group discussions, which were then followed by a presentation by each group, was the most favored approach according to the participants. Using an adult education approach, which applies a

participatory learning method, should be encouraged, particularly when addressing management issues.

4.3 Training evaluation

Because it was not possible to evaluate the skills of the participants after the training, success was measured by rating the participants' attendance. Eighty-one percent of the participants participated in over fifty percent of the training program. Some of the participants still had to carry out their duties while participating in the training, and therefore had to miss some classes and practical field sessions.

4.4 Community participation and PRA (Participatory Rural Appraisal)

There was some uncertainty at the beginning as to whether the training materials should also include a PRA component or something dealing with community participation as the participants were rangers. Their assumption was that their main tasks were only to protect and patrol the park. They equated their status in some aspects to that of the police, whose role it is to punish violators in the park. However, this assumption was wrong, because rangers are, in fact, expected have a more multi-faceted role. Later on, the topics regarding community participation, such as an introduction to the PRA approach, were in fact highly appreciated.

The participants requested further PRA training, and exercises which have to be practiced during the PRA training. Some of the participants had already been exposed to PRA, when they were sent to participate in PRAs organized by local NGOs.

The Community Conservation Agreement of the Alungbanua Village was included in the training folder for the participants. The participants asked the villagers about this agreement, and there was an informal consensus that this draft agreement should be followed up further.

4.5 Field practical training

During the training needs assessment, it became clear that some staff could not swim at all, while other staff needed to practice their swimming skills. With help from the NRM Provincial Liaison Specialist (NRM PLS), pre-training was organized in order to provide the training participants with an opportunity to increase their swimming skills and to help non-swimmers to gain confidence in the water before training was conducted in the sea.

Again, it was not surprising that some staff were unable to swim because swimming is not one of the skills required in the recruitment process. This highlights the terrestrial focus of the Department of Forestry and Estate Crops. It has now been recommended that swimming skills be part of the selection criteria for park rangers who will be stationed in MPAs (marine protected areas).

If we compare the experience in conducting field surveys of the Bunaken Park rangers with Pulau Seribu's park rangers, the latter have more experience and knowledge. Pulau Seribu's park rangers have had chances to accompany students and scientists conducting surveys or research in the Pulau Seribu National Park. The park authority has instructed all students and scientists to take rangers to help in their surveys. The experience gained when working with students or scientists has enhanced the knowledge of the rangers. This system should also be adopted in Bunaken, because there are scientists, students and dive operators who conduct coral reef studies in the park.

The participants were enthusiastic about learning to differentiate between the fauna and flora of coral reefs. It is ironic that these rangers, working in one of the world's top class diving sites, do not know the difference between dead and live coral. The participants had to learn basic snorkeling skills, and they understood that regular snorkeling exercises are necessary in order to master this skill. The participants began to realize that it is not easy to identify marine biota although it is important for them to be able to identify at least the marine protected species.

Bunaken provides a suitable location for field training because some of the reefs are considered safe, especially those areas with gradual slopes, and ones which are protected from strong currents. The beginners in this training activity first

started in shallow water with sea grass beds, and snorkeled to deeper water with rubble bottom. Finally, when they were confident enough, they swam and snorkeled to the edge of the reef. At the end of practical lessons, all of the participants were able to snorkel, and, for the first time, were really able to enjoy the wonders of the coral reefs in their area of work.

An observer from the Pusdiklat (Education and Training Center) of the Department of Forestry and Estate Crops came to observe the training activity in the village. He also joined the snorkeling activity on the last day, which was the first time that he had observed the underwater environment for himself. An ample amount of time was given to the observer to give a background to the purpose of his visit to this training program. He mentioned that the Pusdiklat was interested in developing components in conservation management for marine and coastal training in the Pusdiklat's training program.

5. Findings

1. The park rangers are expected to play a multi-faceted role in the overall management of MPAs (marine protected areas) including: protecting the park from violations; conducting awareness programs; monitoring visitor activities; and surveying the general condition of habitats and biota in the park.
2. The delineation of their individual authorities and responsibilities are unclear. This uncertainty about the scope of their duties and responsibilities has resulted in the rangers occasionally not responding to and reporting violations occurring in the park.
3. The number of park rangers in Bunaken with adequate technical capabilities is far below the minimum requirement.
4. There is a fundamental lack of knowledge about the value and functions of Bunaken National Park.
5. Park rangers appreciated training in basic marine skills and PRA. They also suggested that they receive a more extensive PRA training.

6. Information gathered through in-depth discussions with rangers and senior management staff has led to the conclusion that there is a significant communication gap between the two sides. Rangers complained that they are not supported with adequate facilities for carrying out their jobs. For example, no boats are available for them at the posts where they are stationed. At the same time, the senior management staff pointed out that none of the rangers has a license to operate a boat.
7. The park rangers do not feel pride in their positions and this negative attitude hinders them in the field.
8. There are seven new recruits joining the park rangers: three of them have marine biology backgrounds, one of them is a lawyer, and two are women. The new recruits are enthusiastic and highly motivated. Managed properly, they can contribute significantly to successful conservation management of Bunaken National Park.

6. Recommendations

1. A clear and detailed job description needs to be developed for the position of park rangers. The scope of duty should be appropriate to their backgrounds. A staff handbook containing guidelines for their scope of work and roles and the functions of the park needs to be developed.
2. Partnerships with other stakeholders in the park should be strengthened, and opportunities arising from these partnerships must be better captured. From the identification of opportunities, knowledge can then be exchanged and the possibility can be explored of the stakeholders in the park providing in-service training to the park staff.
3. A comprehensive human resources development strategy for managing MPAs should be developed, with the emphasis on partnerships and participatory management with relevant stakeholders in and around MPAs.
4. Regular exercises concerning an understanding of the threats and opportunities which result from the stakeholders' activities in the park may help to increase the rangers' understanding of the values of the park and their job to protect it.

5. Due to the nature of the job and changing trends in the management of conservation areas, where local communities are part of the process, rangers should have thorough knowledge and understanding of participatory approaches to management. A strong NGO specializing in community organization and outstanding PRA facilitators are available in Manado. Again, it is a matter of identifying opportunities through cooperation.
6. Internal management issues must be addressed. A good facilitator and communicator will help to resolve communication gaps which occur in the organization. If these are not resolved, they will have a negative impact on efficiency, undermine the team-building efforts of the staff as a whole, and make it more difficult to achieve overall management goals and objectives.
7. Technical skills, such as those for obtaining boat-operating licenses, should become part of a management incentive strategy. Maintenance skills training should be included in a package designed for obtaining the boat-operating license.
8. Better knowledge of the management of MPAs and increased abilities to do their jobs will give the rangers a strong sense of pride and job satisfaction. This is essential for effective management of Bunaken and all other MPAs in Indonesia.



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Bunaken National Park Management Assessment Report



NATURAL RESOURCES
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Bunaken National Park Management Assessment Report

1. Introduction

This report was written as part of the rapid management assessment of the Bunaken National Park. The purpose of this assessment was to look at the park management implementation and to identify constraints which it. The three-volume twenty-five-year management plan that was developed with help from the USAID-funded NRMP from 1992 through 1996 was approved in 1997. The status of the park is that of a *Balai* (Semi-Autonomous Management Unit) National Park, and is supervised by the head of the National Park.

Bunaken was declared a conservation area in 1991, and covers 79,065 hectares. The park is famous for its fascinating coral reef walls, covered with an abundance of reef flora and fauna. There are six islands on the north side, and a coastal area bordered with mangrove forests in the south. The largest island in the northern part is Mantehage, which is covered by mangrove forests.

The park is inhabited by approximately 20,000 people who live on islands inside the park, and around the buffer zone. Their livelihoods depend to some extent on the marine resources of the park. Their major types of exploitation include fishing for pelagic fish and some catching of reef fish. Extensive seaweed culture in Nain Island has become a major income-generating activity for the local community.

Bunaken's reefs continue to face threats from human activities, both marine- and land-based. Threats to the park include uncontrolled exploitation of marine fisheries and resources, and the development of tourist facilities that are often not equipped with adequate facilities for waste treatment and disposal. Another threat is the destruction of coral caused by dropped anchors. The major type of land-based pollution comes from household waste, and mostly from plastic bags. Illegal mangrove cutting continues on Mantehage Island, and some also occurs in mangrove forests in the buffer zone. Reclamation activities in the Manado area need to be looked at, in order to anticipate any potential short and long-term effects on Bunaken National Park.

Major National Park management issues that need to be addressed and which are presented in greater detail below, include:

- Minimum level of implementation of the management plan;
- Inadequate zonation system and a lack of marker buoys;
- Inadequate management and control of visitors;
- Inadequate system for solid waste disposal;
- Lack of park awareness and education program;
- Continued lack of clear distribution of responsibility between agencies;
- Lack of interest in participating in and learning from science-based activities;
- Confusion among the locals about the regulation of the park.

2. Park management authority

Because of its status as a *Balai* the National Park has the authority and responsibility for the management of its own budget, and also, to some extent, fundraising to provide its additional sources of funding. To date, there has been very little management in the park. In fact, there is little evidence of the park having received any considerable amount of conservation management support, either financial or technical.

After almost four years' implementation of the participatory planning process in the park, it seems that the level of participation in tackling the management issues in the park by the stakeholders has decreased. The policies of local government (PEMDA) in support of the development of tourism facilities in the park often contradict park management policies. There are still conflicts of interest over resource use among stakeholders that lead to complaints from the local communities who fish on the reefs. They are not allowed to fish on the diving sites. Diving and fishing are seen as competitive and mutually exclusive activities. It appears that there is no understanding of sharing resources between the users. Even though the zonation system was established and approved, the users do not understand the purpose and consequences of the system. It is argued that the unclear criteria and function of each zone has led to the failure of the implementation of the zonation system. Further, zones are unmarked in the field and maps have not been adequately distributed to relevant target audiences.

Park stakeholders, including local communities and some dive operators, still act as though they are unaware of the park's existence. There is a lack of respect by the users towards the National Park authority. It was mentioned that the park staff are often part

of the problem, either because of the way they address management issues, or because of the unprofessional way in which they carry-out their duties.

Bunaken National Park still faces a lack of adequate facilities required to implement the management plan successfully. During the park rangers' training in April 1999, there was very little equipment available to support the training. Basic classroom facilities, such as the overhead projector and slide projector, were broken. The outboard engines of the speedboats are in disrepair. It is arguable whether this lack of maintenance is due to the poor attitude of staff, or to the lack of a budget for repairs. Snorkel equipment was rented because the park's equipment was either not available or broken. The park's reasonably new diving equipment is no longer safe to use. There is a fundamental lack of appreciation of the park's facilities by the staff. There is no sense of belonging or ownership, which leads to negligence in the maintenance of any facilities.

3. Zonation system

The approved zonation system was part of the development of the twenty-five-year management plan. However, according to the park management, this system was no longer appropriate after changes caused by recent developments in the park. The head of the national park therefore proposed the revision of the approved zonation system.

This revised plan was submitted to the PKA in Jakarta last year (1998). To date there has not been any sign of follow-up regarding the proposed revision. It is recommended that the park staff be familiarized with the zonation system, and that they be introduced to the idea of revisions being made to it.

NRM/EPIQ's PAM Team is now working with park management and other stakeholders to develop an improved zonation system, based on a participatory and consultative process. Starting with Nain and Mantahage islands, this zonation system will include community-use zones and community conservation sanctuaries. Zones will be marked in the field, and zonation maps and regulations will be clearly posted in appropriate locations.

4. Partnerships

Dive operators in the Bunaken National Park and other marine areas in North Sulawesi formed a North Sulawesi Water Sports Association (NSWSA). The Association takes a monthly fee from its members and decides how the money should be used. So far, the fees have been used to support the management of the park including providing funds for patrolling. This kind of partnership is encouraged in order to gain support from other stakeholders in the park. However, due to internal policies, the park is not allowed to receive cash direct Support has, therefore, been packaged in the form of joint activities, where the park management could receive support in kind.

The dive operators also supported beach-cleaning activities in the park. Previously, the waste from residential areas and tourist facilities had been handled on an ad hoc basis, and rubbish had been collected and burnt, or used as landfill.

Dive operators, together with the park management, have recently organized a mooring buoy design competition. This competition was targeted at the local communities, and the winners were from villages inside the park.

The head of Bunaken National Park should explore other types of partnerships to strengthen the park management and to address other management issues. This is especially important at this time as the GOI APBN budget for the park has been cut significantly as a result of Indonesia's economic crisis. The park contributes significant tax revenues to the local government through tourism. However, the park does not have adequate funding for effective conservation management. Partnerships with various park stakeholder groups should be used to overcome the lack of financial and technical resources.

The partnership with local NGOs is monitored by FPK, a consortium of various NGOs working on community-based natural resources management issues in North Sulawesi. Community activities in some villages in the buffer zone have been implemented. These include community-mapping training, followed by the mapping of the villages, natural marine resource mapping, environment education for adults, and familiarization with the environmental laws and regulations. One FPK member, Kelola, facilitates community participation and development activities in Bunaken National Park.

Kelola is also helping with the development of a Bunaken National Park guidebook, which is aimed at providing park rangers and local tourist guides with general information about the natural history of the park in both English and Bahasa Indonesia.

There are sufficient initiatives coming from the private sector and from local NGOs in support of park management. It is up to the Bunaken National Park Management authority to seize these opportunities, and to utilize the continuing good will from its partners.

5. Science-based activities in the park

Scientists and volunteers have conducted several science-based activities in the park. So far, there has been very little involvement of the park management in these activities. In fact, some activities have been conducted without the knowledge of the park management. However, the discovery of the Coelacanth (*Latimeria manadoensis*) has opened the eyes of the park management to the possibilities and potential generated by science-based activities conducted in the park.

The reef monitoring by dive operators in the park using their clients as volunteers has been carried out without the knowledge of the park staff. Aspisia Diving Club, the members of which are mostly from the Fisheries Faculty from Samratulangi University, runs regular coral and reef fish monitoring sessions in the park.

All of the above science-based activities are sources of useful input and could provide important information for the natural resources management of the park. However, a lack of initiative and the failure of the staff to participate in these activities have meant that the park staff have missed the opportunity to make use of the data and information gathered.

6. Community participation and development

The villagers of Alungbanua, a village located on Bunaken Island drafted a Community Conservation Agreement. The contents of the agreement include regulation of exploitation of reef resources in the sanctuary zone, and consensus of the villagers not to exploit protected species. The agreement also refers to imposing sanctions for violations. The villagers and the head of the village signed the agreement in 1994 and

1995. However, the Camat (Subdistrict Head) refused to sign the agreement at that time, which led to the collapse of the whole process of the development of the agreement. A further constraint was that the park management, at that time under SB-KSDA, did not acknowledge the agreement. To date the villagers have not implemented the agreement as they seek a reciprocal commitment from the National Park.

As the government begins to encourage participatory approaches to natural resources management, including management of National Parks, the Community Conservation Agreement should be further reviewed and incorporated into the current participatory zonation system. This can contribute significantly to building effective partnerships between local communities and the National Park.

The development of the twenty-five-year management plan was conducted using a participatory planning process. People were invited to come to many community meetings during this process. Management issues were explained and interpreted by various experts. However, to date, the stakeholders have tackled very few management issues in a participatory manner. One possible reason for this is that the level of commitment of the community was not measured beforehand. Another reason might be that the planning process did not involve all relevant stakeholders. These parameters should therefore be considered if the participatory planning process is to have any significant impact.

Some villages in the park have been targeted as a Coremap (a GOI coral reef rehabilitation project supported by the World Bank) community project. The idea of these activities is to help the local communities to find alternative supplies of livelihood instead of exploiting the reef's resources. By providing an alternative income to local communities, the reefs should be less threatened by their activities. However, it is not always easy to find alternatives. It is also difficult to choose an appropriate target group. The locals have been confused by this project from the beginning. In Alungbanua, a locally based NGO, Kelola, which has been working in the village for a number of years, was not consulted. Such a project, which is not planned as a long-term activity, is doomed to failure and disrupts current community participation endeavors for the National Park.

7. Inter-government coordination

The division of responsibility between the marine police and the park rangers is still confusing. Law No 5 Year 1990 Concerning the Conservation of Natural Resources does not state to whom the mandate to protect the conservation areas falls. This situation also applies to the monitoring and protection of fisheries resources. There is a dispute about who is responsible for the monitoring and surveillance of fisheries resources inside the park.

During the park rangers training last April, the head of the marine police in North Sulawesi stated that the marine police have the authority to investigate any suspected violations in the park. He argued that rangers are expected to prevent violations in the park, conduct awareness programs, and inform and familiarize people about the regulations of the park. The rangers do not have the authority to investigate violations. If they witness violations in the park, they have to report then to the police. If they catch the violators, then they have to turn them over to the police within twenty-four hours.

The jurisdiction of the Bunaken National Park area is part of the responsibility of the local government of Manado (Pemda), because the Pemda believes that the land and the people living within the park are outside the authority the park management. Bunaken National Park authority extends only to underwater and tidal areas, e.g. coral reefs, open sea and mangrove forest. These jurisdictional arrangements confuse the agencies concerned as well as local communities.

An example of confusion of jurisdiction occurred when the rangers found a ship carrying live reef fish anchored inside the park. The ship had the necessary permits to fish in the *kecamatan*, issued by the local fisheries agency (Dinas Perikanan). The fishermen claimed that they fished outside the National Park, and that they were inside the park only to change water in the fish tanks. Rangers could not prove that the fishermen fished in the park, and were thus uncertain as to how to proceed with the case.

To date, no visitor fees have been collected from the visitors entering the park. The head of the National Park was reluctant to charge the visitors on the basis of conflicting Government regulations on park user fees. Old regulations divide a low fee among local and central government agencies, with none going to the National Park. A new regulation sets higher fees that are distributed directly to the central government.

Regulations for user fees, including pricing, collection and distribution, need to be clarified for Bunaken and all other National Parks in Indonesia.

8. Communication and awareness program

The park management publishes information about the park every year in the form of leaflets or booklets, and targeted toward the general public. There is no clear distribution strategy, and these materials are thus not used very effectively. The park has considerable potential for public awareness and education activities due to its location and the resources available. Development of a visitors center and a multi-faceted park awareness strategy should be developed. The NRM/EPIQ RARE workshop in September should contribute positively to this.

The “Wisma Cinta Alam” was built in 1995 and is situated up the hill from Bunaken Island’s Liang beach, a popular lunch site for both divers and local day-trippers. This building has not been used since it was built, and there are no signs showing the way to the building. Without knowing it is there, visitors are unlikely to find it. This facility could be expanded and used for public awareness activities. An information center and souvenir shop could be developed here.

A joint partnership could be explored in order to develop an information center. Park management must take leadership in developing this and other partnership initiatives.

9. Summary of Findings

1. The zonation system in the management plan needs to be reviewed and clarified due to various developments in the park.
2. There had been no response as yet to the proposed revisions to the zonation system which had been submitted to the central office in Jakarta. The section overseeing these revisions required the park management to provide data regarding the ownership of the land and islands inside the park. There is still confusion over the ownership of the land and islands inside the park. The MPA management jurisdiction covers only the water and the area under the water. The local communities often own the land or islands through "adat" (traditional) law, and this is legally certified.

3. The confusion over zonation is a problem not only for the stakeholders, such as the local communities and dive operators, but also because it causes misunderstandings among the park staff.
4. NRM/EPIQ's PAM supported a rapid assessment of the condition of coral cover and other biota as a contribution toward the review of the existing zonation. Suggestions were stated in the report which should be considered during the future revisions to the zonation system.
5. Another problem related to zonation is that there are no signs indicating the boundaries of the zonation. Demarcation in the field, as well as on maps is important.
6. Many of the staff are still unaware of the role and functions of the park. This leads to ineffective implementation of the management plan.
7. During the training for the park rangers, a marine police officer stated that the rangers could not investigate a suspected violator of park rules unless a violation had already occurred. Therefore, only marine police officers are authorized to investigate park violations. The local communities also questioned the unclear distribution of responsibility and authority between rangers and police.
8. Due to Indonesia's current economic crisis, the park's annual budget has been cut dramatically. This has crippled the whole operation for implementing the management plan. Activities such as routine patrolling are less frequent, and the maintenance budget is insufficient.
9. The park has the status of a *Balai* (semi-autonomous management unit), which means that the head of the park has the authority to seek further technical and financial support from sources other than the APBN budget. Such authority can be used to create partnerships with stakeholders in the park to address certain tasks. The park management has played an important role in participating in the establishment of the Dive Operators Association in the park. A certain amount of funding, derived from the membership fees, is regularly donated to the park in order to support the patrolling of the park.
10. The twenty-five-year management plan which was developed with support from the NRMP should be reviewed, due to recent developments in the park. There

have been conflicts with the local government (Pemda) of Manado over the status and jurisdiction of the development of the islands in the park.

11. The park has seven new rangers, three of whom graduated from a local university and have a marine biology background. One is a lawyer, and three rangers are women.

10. Conclusions

Park management faces several problems. The reduction of the APBN budget limits the range and scope of management activities. Even without these budget cuts, their yearly budget is never enough for running their operations. To overcome this situation, the park management is encouraged to establish partnerships with other stakeholders in order to tap necessary financial and technical resources. Even though the National Park has changed status to that of a *Balai* (Semi-Autonomous Management Unit), the staff have not yet fully seized the opportunities offered by this change. Park management is still nervous about certain policies which often do not support the new initiatives. The centralized system for the decision-making process is still a burden for the management. Park management needs to more aggressively pursue increased government coordination and partnerships.

There is a lack of communication between staff. This leads to operational inefficiency. The allocation of tasks among staff is not yet efficient. This situation is assumed to be due to the lack of detailed terms of reference/job descriptions for each position. Clear TORs need to be developed for each staff member. An annual performance review should be used to measure success of each staff member and to modify the TOR as necessary.

11. Recommendations

1. The park zonation system needs to be revised. This should be done in a participatory manner with stakeholders representing local communities, government agencies, dive operators, NGOs and the university. The zonation should be based on a consultative process that balances ecological justification with commitment and capacity to manage it. It is recommended to start this zonation on the reef flats surrounding one or two islands, then, after any

necessary revisions to the process, expanding to other areas in the park. The zonation process should involve site selection, clarification of objectives for each zone, definition of roles and responsibilities for managing zonation, marking zonation in the field and on maps, and distributing zonation maps and regulations to relevant target audiences to ensure knowledge about this. In the case of field demarcation, it has been observed that the local communities use markers for seaweed culture construction, using modest materials. Suggestions to use modest markers such as flags have been made to the park management, not only because the costs are low, but also because the people in the area are familiar with this type of marker.

2. Familiarization of the stakeholders with the proposed revisions to the zonation system should be started from now, using participatory, consultative approaches.
3. The Alungbanua village Community Conservation Agreement signed in 1995 concerning the sanctuary zone should be revitalized. Especially with the current low-level of management in Bunaken National Park, community sanctuaries formalized as Community Conservation Agreements can contribute significantly to the park's conservation. It is recommended that partnerships with local NGOs be strengthened in order to better facilitate this process. Community sanctuaries could also become an integral component of the park's zonation system.
4. PKA Jakarta should actively encourage the proposed participatory zonation process. Achieving full agreement on zonation is essential for future park management activities.
5. A review and possible revision of the twenty-five-year management plan is a high priority in order to develop effective annual and five-year workplans. New initiatives should be actively explored to overcome the decrease in the APBN budget. Partnerships with available stakeholders can address this problem, as partnerships can generate much needed financial and technical resources for conservation management of Bunaken National Park.
6. The park needs to develop a clear strategy to maximize the partnership with the Dive Association. A letter of intent should be drafted in order to clarify roles and responsibilities, and to formalize this relationship. The park management should clearly identify potential financial and technical support it generate from

this and other partnerships. The Dive Association has been pro-active in pursuing this partnership, but is becoming increasingly frustrated by the National Park's lack of responsiveness.

Appendix 1

Questionnaire

A questionnaire was developed and filled-in by each of the participants in the Bunaken training program. The questionnaire was grouped into three major categories:

I. Training modules: how the participants perceived the modules

- 1) Were the modules appropriate in order to help them in enhancing the skills they needed for the job, and did they need to be improved?
- 2) Were the modules unimportant and unrelated to their job but good as a source of general knowledge?
- 3) Were the modules a waste of time and should they be eliminated?

II. The organizing of the training program

- 1) Were they satisfied with the logistics?
- 2) Were they satisfied with the accommodation arrangements?
- 3) Were they satisfied with the training facilities and equipment?

III. The training methodology and the expertise of the resource persons/facilitators

- 1) Were they content with the training approaches?
- 2) Were they content with the ability of the resource persons/facilitators?
- 3) Were they satisfied with the time allocated for the training?

The result of the questionnaire was that thirteen out of the sixteen modules were important; they should be increased in quality and more time should be allocated to them. The participants valued the organization as average, and only one participant was dissatisfied with the accommodation in the village. The participants were satisfied with the teaching methodology, but several participants were dissatisfied with the time given for the each of the modules, which they felt was too short.

Certificates to acknowledge that they had participated in the training were given to all participants. It was the intention of Pusdiklat to provide certificates for participants who completed the course successfully. The certificates, to be issued by Pusdiklat, can be used as credit points for the staff performance evaluation.

The participants clearly stated that they were concerned about their human resource development. They expected that the training program would be regularly implemented for them in order to enhance their skills. They suggested that basic technical skills in marine matters such as boat handling, basic knowledge of outboard engine machines, and first aid, should also be included in their routine training.

A joint training program could be organized, such as by using the capacity and knowledge of other agencies to train the MPA staff. This would be much more effective and efficient, both in terms of finance and expertise.

Appendix 2

The results of the questionnaire

The total number of participants who filled in the questionnaire was 15.

No	Materi	Penting	Tidak Penting	Perlu Ditingkatkan	Dihilangkan
1.	Pengetahuan dasar ekologi	7		8	
2.	Pengenalan jenis-jenis biota laut	1		14	
3.	Pengetahuan dasar fisika dan kimia	4	5	6	
4.	Teknik monitoring sumber daya alam	7		8	
5.	Tugas dan fungsi Taman Nasional	3		12	
6.	Pemanfaatan dan ancaman-ancaman dalam kawasan	10	1	4	
7.	Interaksi antara kegiatan stakeholders dan sumber daya dalam kawasan	7		8	
8.	Perangkat dan Penegakan hukum dalam kawasan	8		7	
9.	Informasi yang diperlukan untuk petugas kawasan	7		8	
10.	PRA (partisipasi masyarakat)	7		8	
11.	Penyuluhan peningkatan kesadaran masyarakat	8		7	
12.	Metoda/teknik pemantauan terumbu karang	5		10	
13.	Metoda/teknik pengenalan jenis biota laut	3		12	
14.	Peningkatan kemampuan renang	3		12	
15.	Teknik snorkeling	5		10	
16.	Teknik dasar penyelaman	6		9	

No.	Penyelenggaraan Pelatihan	Memuaskan	Cukup	Kurang Memuaskan
1.	Logistik	9	6	
2.	Akomodasi	4	10	1
3.	Peralatan pelatihan	4	11	

No.	Pengajaran	Baik/tepat	cukup	Kurang/ tidak tepat
1.	Metode pengajaran	12	3	
2.	Kemampuan pengajar/fasilitator dalam menyampaikan materi	11	4	
3.	Waktu yang dialokasikan	1	11	3